SONY



エレクトロニックビューファインダー ELECTRONIC VIEWFINDER

DXF-601/601CE

サービスマニュアル/補修部品表 SERVICE MANUAL

SAFETY RELATED COMPONENT WARNING

Components indentified by shading and \triangle marked on the schematic diagrams and parts list are critical to safe operation. Replace these components with SONY parts whose part numbers appear as shown in this manual or in supplements published by SONY.

X-RAY RADIATION WARNING

Be sure that parts replacement in the high voltage block and adjustments made to the high voltage circuits are carried out precisely in accordance with the procedures given in this manual. このマニュアルに記載されている事柄の著作権は当社にあり、 説明内容は機器購入者の使用を目的としています。 従って、当社の許可なしに無断で複写したり、説明内容(操

従って、当社の許可なしに無断で複写したり、説明内容 (操作、保守等) と異なる目的で本マニュアルを使用することを禁止します。

The material contained in this manual consists of information that is the property of Sony Corporation and is intended solely for use by the purchasers of the equipment described in this manual.

Sony Corporation expressly prohibits the duplication of any portion of this manual or the use thereof for any purpose other than the operation or maintenance of the equipment described in this manual without the express written permission of Sony Corporation.

Le matériel contenu dans ce manuel consiste en informations qui sont la propriété de Sony Corporation et sont destinées exclusivement à l'usage des acquéreurs de l'équipement décrit dans ce manuel.

Sony Corporation interdit formellement la copie de quel-que partie que ce soit de ce manuel ou son emploi pour tout autre but que des opérations ou entretiens de l'équipement à moins d'une permission écrite de Sony Corporation.

Das in dieser Anleitung enthaltene Material besteht aus informationen, die Eigentum der Sony Corporation sind, und ausschließlich zum Gebrauch durch den Käufer der in dieser Anleitung beschriebenen Ausrüstung bestimmt sind

Die Sony Corporation untersagt ausdrücklich die Vervielfältigung jeglicher Teile dieser Anleitung oder den Gebrauch derselben für irgendeinen anderen Zweck als die Bedienung oder Wartung der in dieser Anleitung beschriebenen Ausrüstung ohne ausdrückliche schrift-liche Erlaubnis der Sony Corporation.

目次 TABLE OF CONTENTS

TABLE OF CONTENTS			
1. 取り扱い説明	1.OPERATING INSTRUCTION		
2. サービスインフォメーション	2.SERVICE INFORMATION		
2-1. 主要基板配置図2-1(J)2-2. 主要部品の交換方法2-1(J)2-2-1. MAIN基板交換時の注意2-1(J)2-2-2. CRT/DY Ass'yの交換方法2-1(J)2-3. VFルーペの交換方法2-2(J)2-4. アウトサイドホルダーTおよび接眼部外筒の交換方法2-3(J)	2-1.BOARD LAYOUT		
3. 調整要項	3.ALIGNMENT		
3-1. 準備 3-1(J) 3-1-1. 使用機器 3-1(J) 3-1-2. 接続および初期セッティング 3-1(J) 3-1-3. MAIN基板交換時の注意 3-1(J) 3-2. ビューファインダー系調整 3-2(J) 3-2-1. +9.5V調整 3-2(J) 3-2-2. 垂直ホールド調整 3-2(J) 3-2-3. 水平ホールド調整 3-2(J) 3-2-4. ブライトキャリブレーション調整 3-3(J) 3-2-5. フォーカス調整 3-4(J) 3-2-7. ピーキングオフセット調整 3-4(J)	3-1.PREPARATION 3-1(E) 3-1-1. Equipment Required 3-1(E) 3-1-2. Connection and Initial Setting 3-1(E) 3-1-3. Notes on Replacing the MAIN Board 3-1(E) 3-2.VIEWFINDER SYSTEM ADJUSTMENT 3-2(E) 3-2-1. +9.5V Adjustment 3-2(E) 3-2-2. Vertical Hold Adjustment 3-2(E) 3-2-3. Horizontal Hold Adjustment 3-2(E) 3-2-4. Bright Calibration Adjustment 3-3(E) 3-2-5. Focus Adjustment 3-3(E) 3-2-6. Picture Frame Adjustment 3-4(E) 3-2-7. Peaking Offset Adjustment 3-4(E)		
A. BLOCK DIAGRAM			
B. SCHEMATIC DIAGRAM ILLUSTRATIONS	IS AND BOARD		
110000000000000000000000000000000000000	B .4		

MAIN BOARD	B-	1
SUB BOARD	B-	1

C. SEMICONDUCTOR

D. SPARE PARTS

PARTS INFORMATION	D-1
EXPLODED VIEW	
ELECTRICAL PARTS	D-4

第1章 取り扱い説明

取り扱い説明書をそのまま 掲載しています。

DXF-601はソニーのCCDカラービデオカメラDXC-637に取り付けてお 使いいただくためのエレクトロニックビューファインダー(白黒)で す。ご使用の際は、カメラの取扱説明書も併せてご覧ください。

主な仕様

ブラウン管

1.5型、白黒

表示ランプ

REC/TALLY, BATT, SHUTTER, GAIN UP

解像度

600本

信号方式

EIA規格 DC12V

電源電圧

2.1W

消費電力 質量

約660g

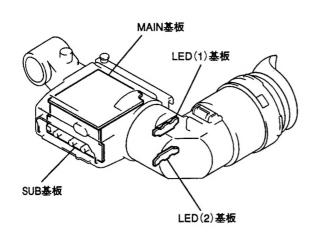
最大外形寸法

236×85×219mm(幅/高さ/奥行き)

- このビューファインダーは日本国内用です。放送規格の異なる外国ではお使いになれません。
- ●この製品には保証書が添付されています。所定の事項の記入および 記載内容をお確かめのうえ、大切に保存してください。
- 仕様および外観は改良のため予告なく変更することがありますが、 ご了承ください。

第2章 サービスインフォメーション

2-1. 主要基板配置図



2-2. 主要部品の交換方法

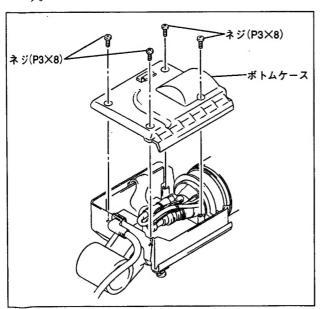
2-2-1. MAIN基板交換時の注意

MAIN基板を交換したときは、3-1-3. MAIN基板交換時の注意 を参照して調整を行って下さい。

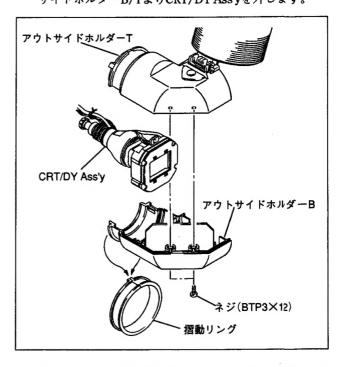
2-2-2. CRT/DY Ass'yの交換方法

注意: 偏向ヨークを交換する場合は、CRT/DY Ass'yごと交換して下さい。

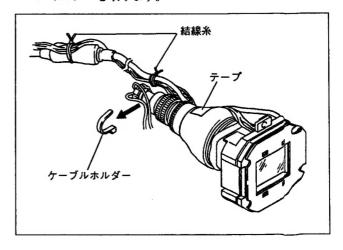
1. 図に示す4本のネジを外し、ボトムケースを取り外します。



2. 図に示す摺動リングを外し、2本のネジを外してアウト サイドホルダーB/TよりCRT/DY Ass'yを外します。

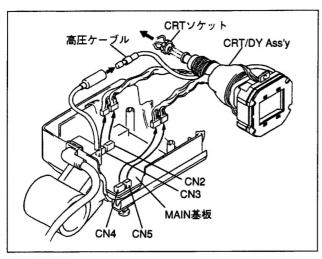


3. CRT/DY Ass'yの図に示す結線糸、テープおよびケーブルホルダーを取ります。



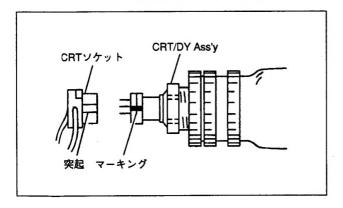
DXF-601 (J)

4. MAIN基板のCN2, 3, 4, 5のコネクターを外し、更に図に 示す高圧ケーブルの端子を外します。そして、CRT/DY Ass'yからCRTソケットを外します。



注意: CRTソケットは、CRT/DY Ass'yから真後ろにゆっく り引き抜くようにして下さい。そうしないとCRT/DY Ass'yのコネクターピンが折れ曲がる可能性がありま す。

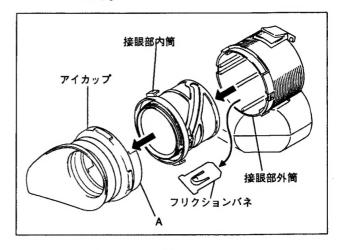
1~4の逆の手順で新しいCRT/DT Ass'yを取り付けます。
 注意:CRTソケットをCRT/DY Ass'yに接続する時は、
 図に示すCRTソケットの突起とCRT/DY Ass'yのマーキング部が合うようにして接続して下さい。



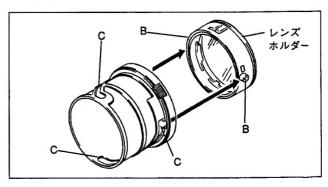
2-3. VFルーペの交換方法

1. 図に示すA部と接眼部外筒の隙間にマイナスドライバー を差し込み、A部を持ち上げてアイカップを外します。 そして、接眼部内筒を取り出します。

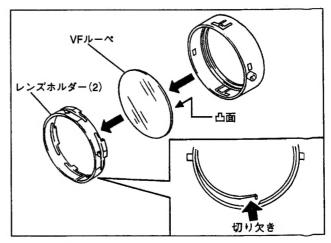
注意: この時フリクションバネも外れてしまうことがあ ります。



2. 図に示すB部を持ち、C部の溝に沿ってレンズホルダー を取り外します。

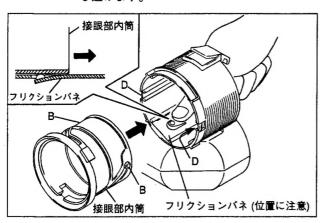


3. 図に示す切り欠き部の片方を外し、レンズホルダー(2) を引き抜き、VFルーペを外します。



2-2 (J) DXF-601 (J)

- 4. 1~3の逆の手順でVFルーペを交換します。
 - 注意:①VFルーペを取り付ける時は必ず凸凹の向きを確認して下さい。(手順2-3-3.参照)
 - ② 接眼部内筒を取り付ける時はフリクションバネの挿入位置を確認し、フリクションバネを指で押えます。そして、図に示すB部の突起部とD部の切り欠き部を合わせて接眼部内筒を差し込みます。



• 別売VFルーペ

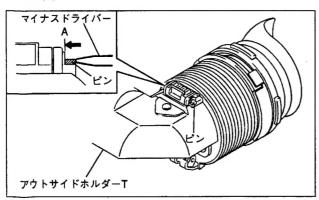
別売VFルーペとして下記の2種類が用意されています。 対応する視度範囲を確認の上お求め下さい。

老視用VFルーペ;

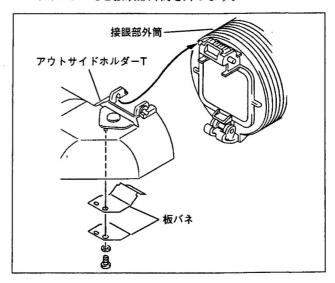
-2D~+1D (ソニー部品番号 3-725-276-01) -0.5D~+3D (ソニー部品番号 3-176-501-01) (参考)標準ルーペ; -3D~0D

2-4. アウトサイドホルダーTおよび接眼部 外筒の交換方法

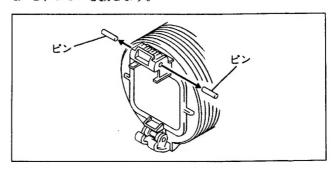
- 1. 2-2-2.項のCRT/DY Ass'yの交換方法を参照し、アウトサイドホルダーTを外します。
- 2. 2本のピンをマイナスドライバーで図に示すA部まで押します。



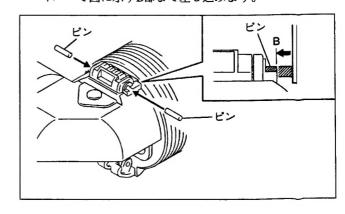
3. 図に示すネジとワッシャーを外して、2本の板バネを外します。そして、矢印の方向へ持ち上げて、アウトサイドホルダーTと接眼部外筒を外します。



4. 2本のピンを抜きます。



5. 新しいアウトサイドホルダーTまたは接眼部外筒を交換 します。そして、2本のピンを差し込み、マイナスドラ イバーで図に示すB部まで差し込みます。



第3章 調整要項

3-1. 準備

3-1-1. 使用機器

- 1. パターンボックス PTB-500 ソニー部品番号 J-6029-140-B
- 2. 解像度チャート ソニー部品番号 J-6026-100-A
- 3. ホワイトウインドウチャート
- 4. ビデオカメラ DXC-637等
- 5. カメラアダプター CA-537等
- 6. ACアダプター CMA-8/8A
- 7. カメラケーブル CCQ-2BRS
- 8. 白黒モニター PVM-91同等品
- 9. オシロスコープ
- 10. 波形モニター
- 11. デジタル電圧計

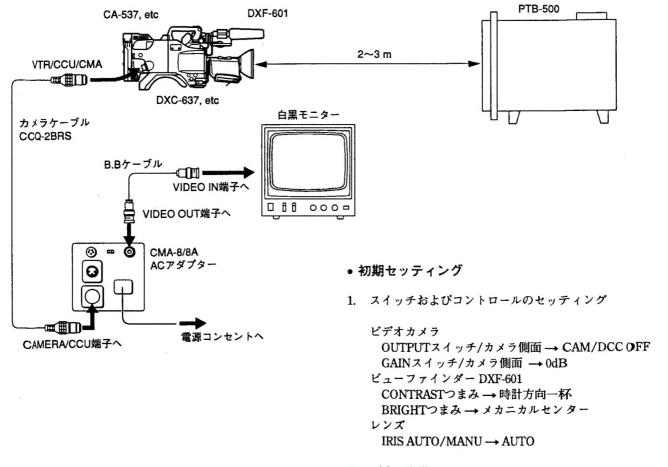
3-1-3. MAIN基板交換時の注意

MAIN基板を交換した場合は、下記のように行って下さい。

- 2. MAIN基板のIC5の1ピンの電圧が6.0±1.7 Vdcになっていることを確認します。
- 3. もし、上記の規格を満足していない場合は、規格を満足 するようにMAIN基板のR47の抵抗値を下記の中から選 択し、マウントし直して下さい。

R47の抵抗値:2.0 kΩ 2.7 kΩ 3.3 kΩ (工場出荷値) 4.7 kΩ

3-1-2. 接続および初期セッティング



- 2. 画出し準備
 - (1) レンズズームで、解像度チャート枠とモニター画面 のアンダースキャン画枠を一致させます。
 - (2) レンズフォーカスで、モニター画面の解像度が最も良くなるようにします。

3-2. ビューフィンダー系調整

3-2-1. +9.5V 調整

注意事項:測定点の電圧が規格値に対して±1%以上ずれて

る場合のみ調整を行って下さい。

この調整を行った場合は、調整要項の全項目を確

認し下さい。

測定器: デジタル電圧計 測定点: TP1/MAIN基板

調整箇所: ❷RV1(VO ADJ)/MAIN基板

規格: +9.5±0.05 Vdc

3-2-2. 垂直ホールド調整

注意事項:

ビューファインダーDXF-601を取り付けているビデオカメラの種類が下記の場合は、MAIN基板のR66の抵抗を外してから調整を行って下さい。調整終了後、再度、MAIN基板のR66の抵抗を元の位置に取り付けて下さい。

- ビデオカメラがカメラアダプターCA-537以外の機器 (VTR、CCU)と接続している場合
- ビデオカメラがUVW-100等の一体型ビデオカメラの場合

測定器: オシロスコープ

準備: ◆RV7(V SIZE)/MAIN基板 → メカニカルセン

ター

(◆RV7(V SIZE)/MAIN基板がマーキングされて

いる場合は、廻さないで下さい。)

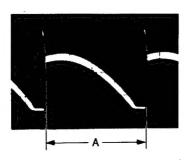
測定点: CN5-1ピン/MAIN基板

調整箇所: ◆RV6(V HOLD)/MAIN基板

規格: $A = 25.6 \pm 0.3 \text{ ms}$

調整手順

レンズのRETボタンを押し、ビューファインダーをフリーラン状態(ビューファインダーにビデオ信号が入力されない状態)にし、規格を満足するように●RV6(V HOLD)/MAIN基板を調整します。



3-2-3. 水平ホールド調整

被写体: ホワイトウインドウチャート

測定器: 波形モニター、オシロスコープ

トリガ: CH2/オシロスコープ

準備:

1. ホワイトウインドウチャートを撮像し、モニター画像が 全面白になるようにレンズズームを調整します。



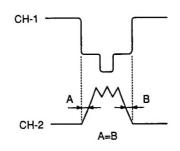
2. カメラのVIDEO OUT端子の白レベルが100±2 IREになるようにレンズ絞りを調整します。

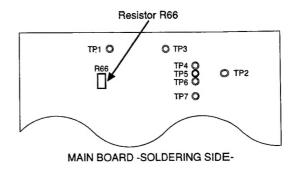
測定点: CH1 TP5(H1)/MAIN基板

CH2 TP9(+H DEF)/MAIN基板

調整箇所: ❷RV5(H HOLD)/MAIN基板

調整:





3-2-4. ブライトキャリブレーション調整

被写体:解像度チャート

準備:

1. BRIGHTつまみ(ビューファインダー)

→ 時計方向一杯〇

2. CONTRASTつまみ(ビューファインダー)

→ 時計方向一杯〇

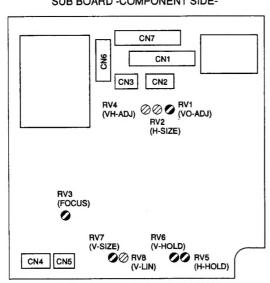
調整:

◆RV12(SUB BRIGHT)/SUB基板を時計方向一杯○から反時計方向へ廻していき、白黒階調の3段目までを黒につぶし、4段目が識別できるように調整します。

RV10 (PEAK-OFFSET) (SUB-BRIGHT)

CN8

SUB BOARD -COMPONENT SIDE-



MAIN BOARD -COMPONENT SIDE-

3-2-5. フォーカス調整

注意事項:

この調整と"3-2-6. 画枠調整"は互いに影響しあうので、両方の規格が満足されるまで繰り返し調整を行って下さい。

被写体:解像度チャート 測定器:波形モニター

準備:

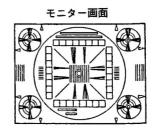
- 1. IRIS AUTO/MANU($\nu \chi \chi$) \rightarrow MANU
- 2. BRIGHTつまみ(ビューファインダー)

→ メカニカルセンター

- 3. CONTRASTつまみ(ビューファインダー)
 - → 時計方向一杯〇
- 4. PEAKINGつまみ(ビューファインダー)
 - → 反時計方向一杯〇

調整:

1. 解像度チャート枠とモニター画面のアンダースキャン画枠が一致するようにレンズズームを調整します。



- 2. カメラのVIDEO OUT端子の白レベルが100±2 IREになるようにレンズ絞りを調整します。
- 3. **⊘**RV3(FOCUS)/MAIN基板をビューファインダー画像のフォーカスが最も良くなる点に合わせます。

3-2-6. 画枠調整

注意事項:

この調整と"3-2-5.フォーカス調整"は互いに影響しあうので、両方の規格が満足されるまで繰り返し調整を行って下さい。

被写体:解像度チャート 測定器:波形モニター

準備:

1. BRIGHTつまみ(ビューファインダー)

→メカニカルセンター

2. CONTRASTつまみ(ビューファインダー)

→ メカニカルセンター

3. PEAKINGつまみ(ビューファインダー)

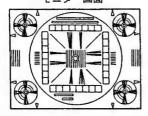
→ 反時計方向一杯〇

4. アイカップを外します。

調整:

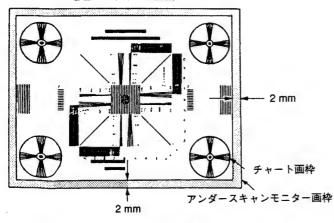
1. 解像度チャート枠とモニター画面のアンダースキャン画枠が一致するようにレンズズームを調整します。 カメラのVIDEO OUT端子の白レベルが100±2 IREになるようにレンズ絞りを調整します。





- 2.
 ◆RV2(H SIZE)/MAIN基板で、解像度チャートの水平サイズをCRTの縁より約2 mmアンダースキャンします。
- 3. **◇RV7 (V SIZE)/MAIN基板で、解像度チャートの垂直サイズをCRTの縁より約2 mmアンダースキャンします。**

ビューファインダ画面



- ◆RV8(V LIN)/MAIN基板で、解像度チャートの四隅の 円を真円にします。
- 5. 各規格を満足するまで、手順2~4を数回繰り返します。

3-2-7. ピーキングオフセット調整

被写体:ホワイトウインドウチャート

進備:

- ホワイトウインドウチャートを撮像し、カメラのVIDEO OUT端子の白レベルが50±2 IREになるようにレンズ絞 りを調整します。
- 2. CONTRASTつまみ(ビューファインダー)

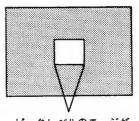
→メカニカルセンター

3. PEAKINGつまみ(ビューファインダー)

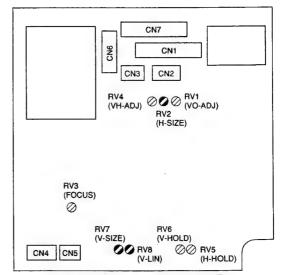
→時計方向一杯○にした後、反時計方向へ 約10度廻します。

測定点:ビューファインダー画面

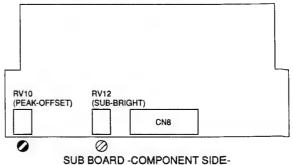
調整: ピークレベルのエッジが左右で等しくなるように ◆RV10(PEAK OFFSET)/SUB基板を調整します。



ピークレベルのエッジが 等しいこと



MAIN BOARD -COMPONENT SIDE-



DOMIN CHENT CIDE

SECTION 1 OPERATING INSTRUCTION

This section is extracted from operation manual.

The DXF-601/601CE is an electronic (monochrome) viewfinder which can be attached to a Sony CCD Color Video Camera DXC-637/637P. For details of operation, refer to the Operating Instructions for the camera.

Principal Specifications

Picture tube

1.5-inch monochrome

Indicators

REC/TALLY, BATT, SHUTTER, GAIN UP

Resolution

600 TV lines

Signal system

DXF-601: EIA standards

DXF-601CE: CCIR standards

Power supply

12 V DC

Power consumption

2 1 W

Mass

660 g approx. (1 lb 7 oz)

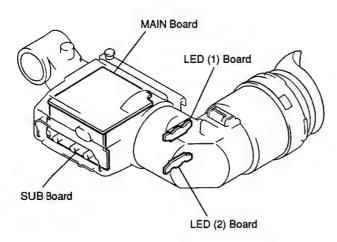
Maximum external dimensions

236 (W) × 85 (H) × 219 (D) mm $(9^3/8 \times 3^3/8 \times 8^5/8 \text{ inches})$

Design and specifications are subject to change without notice.

SECTION2 SERVICE INFORMATION

2-1. BOARD LAYOUT



2-2. REPLACEMENT OF MAIN PARTS

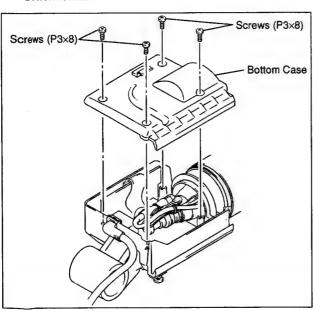
2-2-1. Notes on Replacement of MAIN Board

To replace the MAIN board, perform adjustment referring to Section 3-1-3. "Notes on replacing the MAIN board".

2-2-2. Replacement of CRT/DY Ass'y

Note: If a deflection yoke is replaced, you should replace assembly of CRT and deflection yoke (CRT/DY ASS'Y).

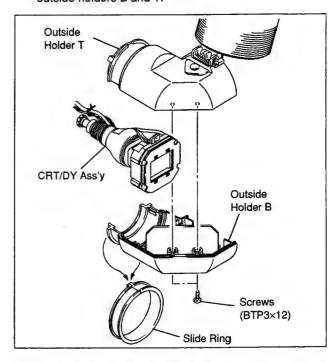
 Remove four screws as shown in Figure and remove the bottom case.



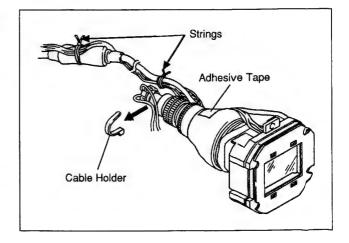
DXF-601 (UC)

DXF-601CE (EK)

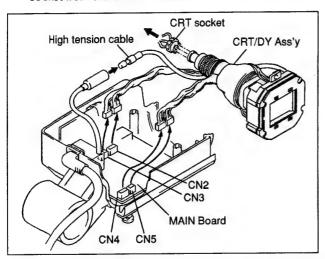
Remove the slide ring as shown in Figure. Remove two screws and remove the CRT/DY ASS'Y from outside holders B and T.



 Untile two strings and remove an adhesive tape and Cable Holder.



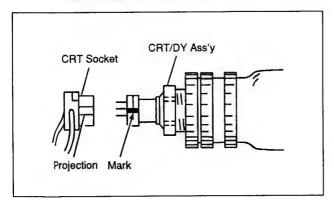
 Disconnect four connectors CN2, 3, 4, 5 and 7 on the MAIN board and high-tension cable. Disconnect the CRT socket from the CRT/DY ASS'Y.



Note: In disconnecting, carefully pull the CRT socket backward, as the pins of CRT/DY ASS'Y is liable to bend.

When installing a new CRT/DY ASS'Y, reverse the above procedures.

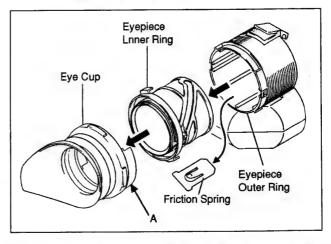
Note: In reconnecting the CRT socket, be sure to match a projection of the CRT socket with a mark of the CRT/DY ASS'Y.



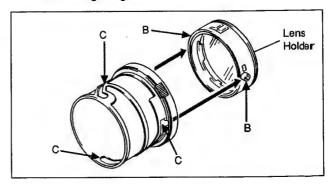
2-3. REPLACEMENT OF VF LOUPE

 Insert a minus screw driver to the clearance between portion A and eyepiece outer ring as shown in Figure. Remove eye cup by lifting its portion A and remove eyepiece inner ring.

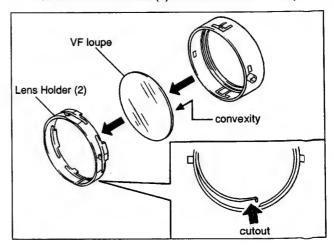
Note: When removing eyepiece inner ring, the friction spring is liable to remove.



2. Hold the portion B as shown in Figure. Remove the lens holder along the groove C.



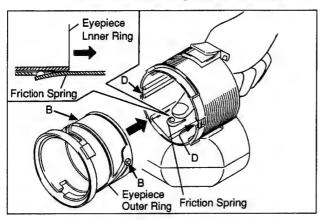
3. Remove one side of cutout portion as shown in Figure. Pull out the lens holder (2) and remove the VF loupe.



 When installing the VF loupe, reverse the above procedures.

Note: ① When installing the VF loupe, ensure the direction of VF loupe. (Refer to Item 2-3-3.)

② When installing eyepiece inner ring, ensure the inserting position of friction spring and hold it by finger. Match boss of portion D and insert the inner ring to the outer ring.



Optional VF loupe

There are two kind of VF loupes as optional accesory. Use a VF loupe to match your visibility range.

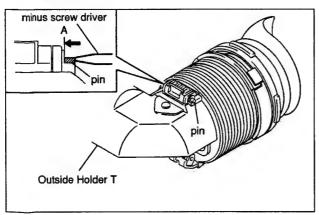
VF loupe for aged eyes;

-2D to +1D (Sony part No. 3-725-276-01)

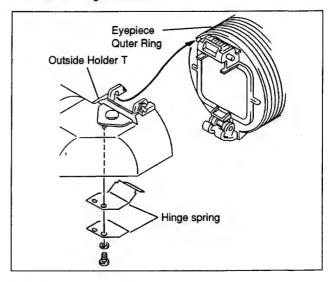
-0.5D to +3D (Sony part No. 3-176-501-01) (For reference) Standard; -3D to 0D

2-4. REPLACEMENT OF OUTSIDE HOLDER T AND EYEPIECE OUTER RING

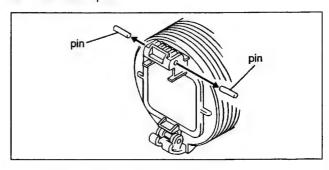
- Remove the Outside holder T referring to Section 2-2-2. "Replacement of CRT/DY Ass'y".
- Push two pins to portion A by minus screw driver as shown in Figure.



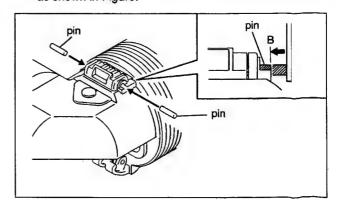
Remove a screw, washer and two hinge springs. Then, remove the outside holder T and eypiece outer ring as shown in Figure arrow.



4. Pull out two pins.



 Replace outside holder T or eyepiece outer ring to new one. And insert two pins to portion B by minus screw driver as shown in Figure.



SECTION 3 ALIGNMENT

3-1. PREPARATION

3-1-1. Equipment Required

- Pattern box PTB-500
 Sony part number J-6029-140-B
- 2. Resolution chart Sony part number J-6026-100-A
- 3. White Window chart
- 4. Video camera DXC-637/637P, etc.
- 5. Camera Adaptor CA-537/537P, etc.
- 6. AC Adaptor CMA-8/8CE/8A/8ACE
- 7. Camera Cable CCQ-2BRS
- 8. B/W monitor PVM-91/91CE or equivalent
- 9. Oscilloscope
- 10. Waveform monitor
- 11. Digital voltmeter

3-1-3. Notes on replacing the MAIN board

When replacing the MAIN board, perform as follows.

- 1. Lens iris of Video camera → Close "C"
- 2. Confirm that the DC level at pin 1 of IC5 on the MAIN board is 6.0 ± 1.7 Vdc.
- If not met, re-mount R47 resistor on the MAIN board so that the specification is met by selecting one of following resistors.

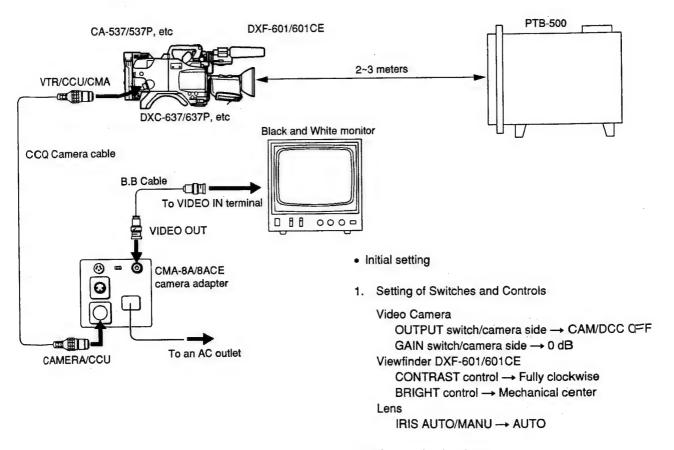
R47: 2.0 kΩ

2.7 kΩ

3.3 kΩ (selected at the factory)

 $4.7 k\Omega$

3-1-2. Connection and Initial setting



- 2. Preparation for picture
 - (1) Adjust the lens zoom so that the Resolution chart frame coincides the underscanned picture frame on the monitor.
 - (2) Adjust the iris control for the best resolution of the monitor.

DXF-601 (UC) DXF-601CE (EK)

3-1 (E)

3-2. VIEWFINDER SYSTEM ADJUSTMENT

3-2-1. +9.5V Adjustment

Note: Perform the adjustment only when measured voltage is more than ± 1% with respect to the specified voltage. When this adjustment is carried out, all of following adjustments must be confirmed.

Equipment: Digital voltmeter
Test point: TP1/MAIN board

Adjusting point: ORV1 (VO ADJ)/MAIN board

Specification: $+9.5 \pm 0.05 \text{ Vdc}$

3-2-2. Vertical Hold Adjustment

Note: When the video camera attached viewfinder DXF-601/601CE is applied the following cases, perform adjustment with removing R66 resistor on the MAIN board. After adjustment, re-mount R66 resistor.

- In case the video camera is connected the peripheral equipment (VTR, CCU, etc.) expept the camera adaptor CA-537/537P.
- In case the video camera is one-piece camera (ex. UVW-100/100P)

Equipment: Oscilloscope

Preparation:

②RV7 (V SIZE)/MAIN board → Mechanical center (If ②RV7 (V SIZE)/MAIN board is marked, not turn ②RV7 (V SIZE)/MAIN board.)

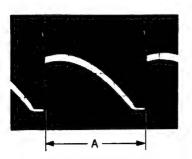
Test point: CN5-pin 1/MAIN board

Adjusting point: •RV6 (V HOLD)/MAIN board

Specification: $A = 25.6 \pm 0.3 \text{ ms}$

Adjustment Procedure

Adjust ©RV6 (V HOLD)/MAIN board so that the specification is met while the viewfinder is free-run state (Viewfinder is not input any video signal.) by pressing the RET button of Lens.



3-2-3. Horizontal Hold Adjustment

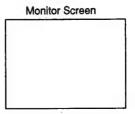
Object: White Window chart

Equipment: Waveform monitor, Oscilloscope

Trigger: CH2/Oscilloscope

Preparation:

 Shoot the White Window chart and adjust the lens zoom so that the picture on the monitor screen becomes all white.



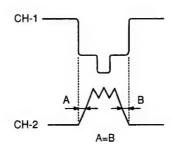
2. Adjust the iris control for the white level at VIDEO OUT connector on the camera is 100 ± 2 IRE (PAL: 700 ± 14 mV).

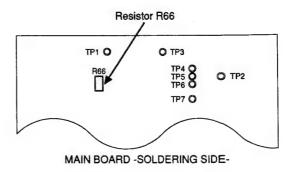
Test point: CH1 TP5 (H1)/MAIN board

CH2 TP9 (+H DEF)/MAIN board

Adjusting point: ORV5 (H HOLD)/MAIN board

Adjustment:





3-2-4. Bright Calibration Adjustment

Object: Resolution chart

Preparation:

1. BRIGHT control (Viewfinder)

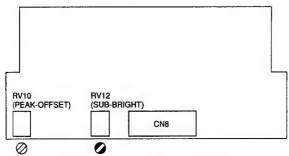
→ Fully clockwise ○

2. CONTRAST control (Viewfinder)

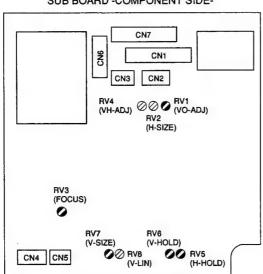
→ Fully clockwise ○

Adjustment:

Adjust the picture by turning PRV12 (SUB BRIGHT)/SUB board counterclockwise from fully clockwise position so that the black and white gradation scale is black up to the third step and the forth step is recognizable.



SUB BOARD -COMPONENT SIDE-



MAIN BOARD -COMPONENT SIDE-

DXF-601 (UC)
DXF-601CE (EK)

3-2-5. Focus Adjustment

Note: "3-2-6. Picture Frame Adjustment" and this adjustment affect each other.

Repeat these adjustments until both specifications are satisfied.

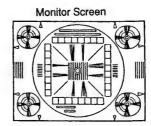
Object: Resolution chart Equipment: Waveform monitor

Preparation:

- IRIS AUTO/MANU (Lens) → MANU
- 2. BRIGHT control (Viewfinder)
 - → Mechanical center
- 3. CONTRAST control (Viewfinder)
 - → Fully clockwise ()
- 4. PEAKING control (Viewfinder)
 - → Fully counterclockwise Ω

Adjustment:

 Adjust the lens zoom so that the resolution chart frame coincides the underscanned picture frame on the monitor screen.



- 2. Adjust the iris control for the white level at VIDEO OUT connector on the camera is 100 ± 2 IRE (PAL: 700 ± 14 mV).
- 3. Adjust ◆RV3 (FOCUS)/MAIN board so that the picture on the viewfinder screen is best focused.

3-2-6. Picture Frame Adjustment

Note: "3-2-5. Focus Adjustment" and this adjustment affect each other.

Repeat these adjustments until both specifications are satisfied.

Object: Resolution chart **Equipment:** Waveform monitor

Preparation:

1. BRIGHT control (Viewfinder)

→ Mechanical center

2. CONTRAST control (Viewfinder)

→ Mechanical center

3. PEAKING control (Viewfinder)

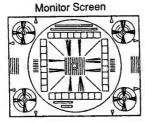
→ Fully counterclockwise ∩

4. Remove the eye cap from the viewfinder.

Adjustment:

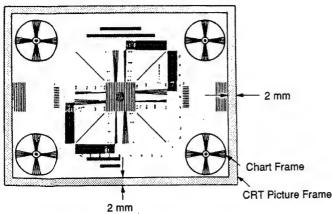
 Adjust the lens zoom so that the resolution chart frame touches the underscanned picture frame on the monitor screen.

Adjust the iris control for the white level at VIDEO OUT connector on the camera is 100 ± 2 IRE (PAL: 700 ± 14 mV).



- Adjust ORV2 (H SIZE)/MAIN board so that the H size of resolution chart is underscanned by approximately 2 mm from the CRT picture frame.
- Adjust ◆RV7 (V SIZE)/MAIN board so that the V size of resolution chart is underscanned by approximately 2 mm from the CRT picture frame.

Viewfinder Screen



- Adjust ORV8 (V LIN)/MAIN board so that the distortion of each circle at the four corners of resolution chart is minimized.
- 5. Repeat procedure 2 to 4 until the specification are satisfied.

3-2-7. Peaking Offset Adjustment

Object: White Window chart

Preparation:

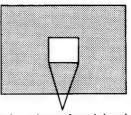
- 1. Shoot the White Window chart and adjust the lens iris so that the white level at VIDEO OUT connector on the camera is 50 ± 2 IRE (PAL: 350 ± 10 mV).
- 2. CONTRAST control (Viewfinder)
 - → Mechanical center
- 3. PEAKING control (Viewfinder)
 - → From fully clockwise to counterclockwise by 10 degrees.

Test point: Viewfinder Screen

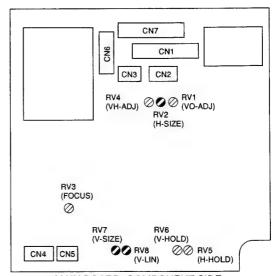
Adjustment: Adjust ORV10 (PEAK OFFSET)/SUB board so

that the right and left edges of peak level are

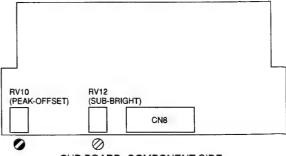
the same.



Be sure that the edges of peak level are the same.

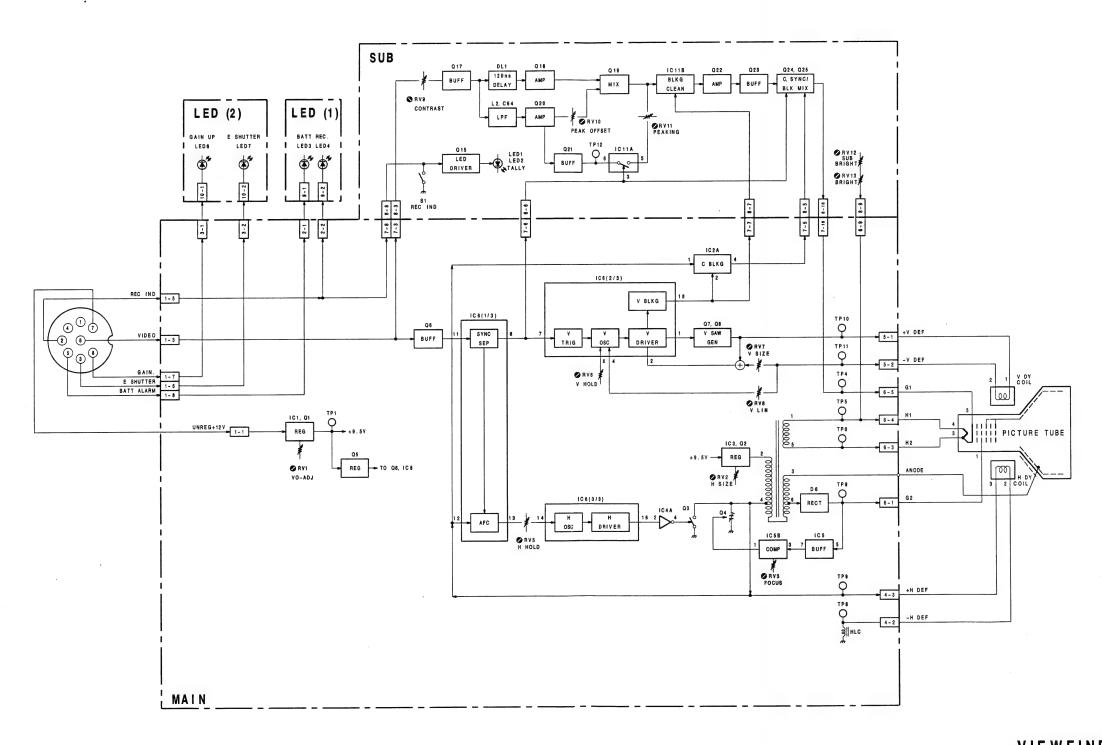


MAIN BOARD -COMPONENT SIDE-



SUB BOARD -COMPONENT SIDE-

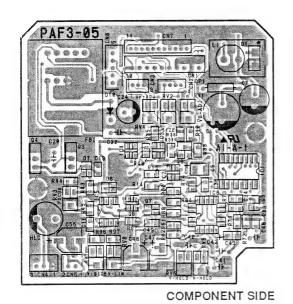
SECTION A BLOCK DIAGRAM

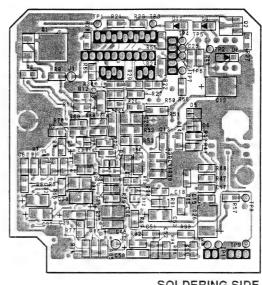


VIEWFINDER
DXF-601(J)
DXF-601(UC)
DXF-601CE(EK)
B-YDXC601-0ABLOCK/M

SECTION B SCHEMATIC DIAGRAMS AND BOARD ILLUSTRATIONS

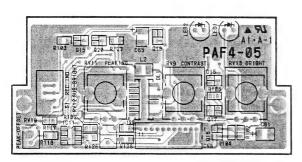
MAIN BOARD



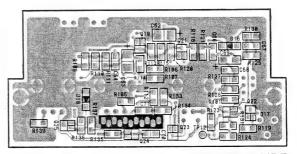


SOLDERING SIDE

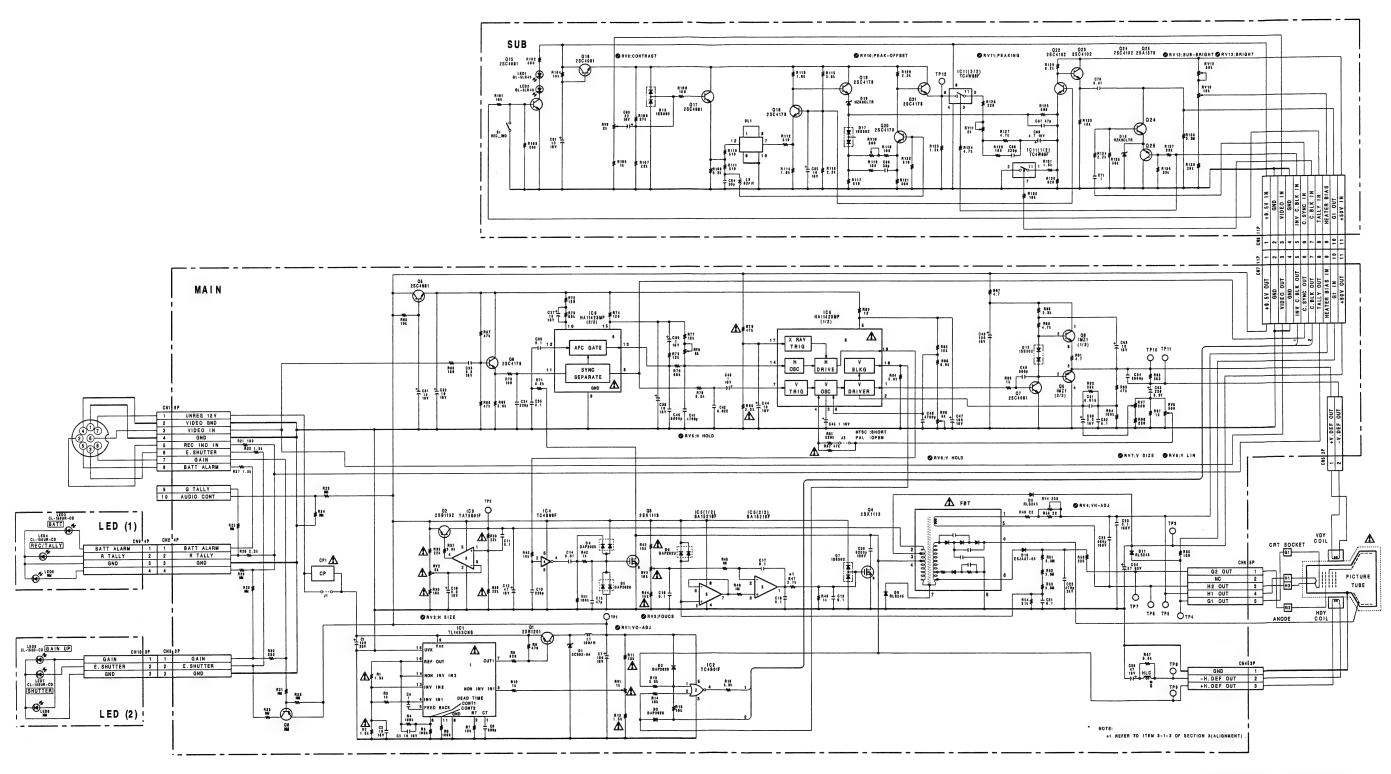
SUB BOARD



COMPONENT SIDE



SOLDERING SIDE

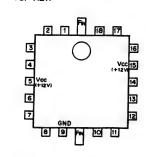


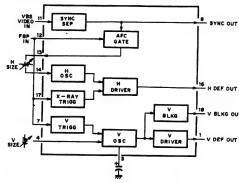
FRAME WIRING
MAIN BOARD
SUB BOARD
DXF-601(J)
DXF-601(UC)
DXF-601CE(EK)
B-YDXF801-FRAME/IM

SECTION C SEMICONDUCTOR

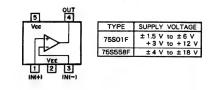
The circuit diagram of IC is obtained from the IC data book published by the manufacturer. < DIODE> ISCALE 4/1) TOP VIEW **1SS302** DAP202U ESJA57 GL-5LR40; RED SC802-04 RLS245 < TRANSISTOR > 2SA1579 ISCALE 4/1) TOP VIEW 2SB1132 2SB1201 < IC > IMZ1 2SK1113 (SCALE 6/1) -TOP VIEW-BA15218F (ROHN) FLAT PACKAGE DUAL OPERATIONAL AMPLIFIER - TOP VIEW -

HA11423MP (HITACHI) FLAT PACKAGE TV H/V SYNC SIGNAAL PROCESSOR - TOP VIEW-

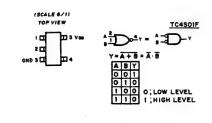




TA75S01F (TOSHIBA) SINGLE OPERATIONAL AMPLIFIER - TOP VIEW -

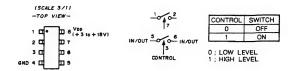


TC4S01F (TOSHIBA) CHIP PACKAGE C-MOS 2-INPUT NOR GATE

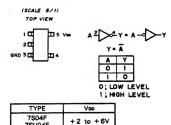


TYPE	Voo
4S01F	+3 to +18V
7S02F	
7S02FU	+2 to +6V
7SH02FU	7

TC4W66F (TOSHIBA) CHIP PACKAGE C-MOS DUAL BILATERAL SWITCH

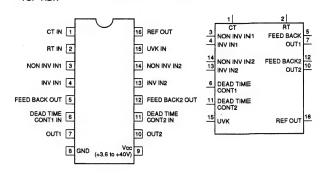


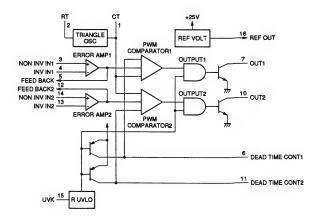
TS4S69F (TOSHIBA) CHIP PACCKAGE C-MOS INVERTER



TYPE	Voo	
7S04F 7SU04F	+2 to +6V	
4S69F 4SU69F	+3 to +18V	
7SH04FU	+2 to +5.5V	

TL1453CNS (TI) FLAT PACKAGE DUAL SWITCHING REGULATOR CONTROLLER - TOP VIEW -





SECTION D SPARE PARTS

PARTS INFORMATION

1. Safety Related Component Warning

Components indentified by shading marked with \triangle on the schematic diagrams, exploded views and electrical spare parts list are critical to safe operation. Replace these components with Sony parts whose parts numbers appear as shown in this manual or in service manual supplements published by Sony.

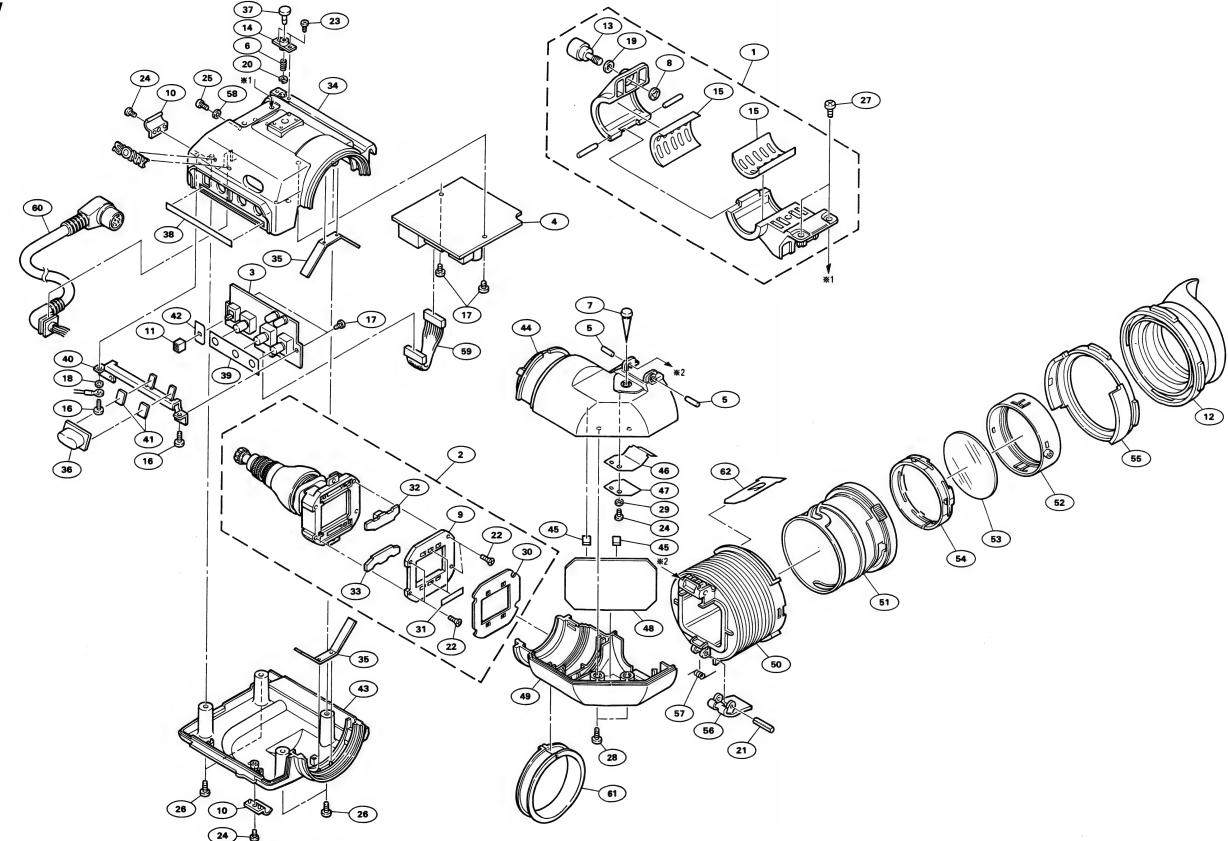
- 2. Replacement Parts supplied from Sony Parts Center will sometimes have different shape and outside view from the parts which actually in use. This is due to "accommodating the improved parts and/or engineering changes" or "standardization of genuine parts." This manual's exploded view and electrical spare parts lists are indicating the parts numbers of "the standardized genuine parts at present." Regarding engineering parts and diagrams changes in our engineering department, refer to SONY service bulletins and service manual supplements.
- 3. The parts marked with "S" in the SP column of the exploded views and electrical spare parts list are normally required for routine service work. Orders for parts marked with "O" will be processed, but allow for additional delivery time.
- 4. Item with no parts number and/or no description are not stocked because they are seldom required for routine service.
- All capacitors are in micro farads unless otherwise specified.
 All inductors are in micro henries unless otherwise specified.
 All resistors are in ohms.

DXF-601 (J, UC) DXF-601CE (EK)

D-1

	,		
		•	

EXPLODED VIEW



```
Part No.
                     SP Description
No.
        A-8278-161-A o HOLDER ASSY, MICROPHONE
   △ 1-547-798-11 s CRT/DY+CONNECTOR ASSY
   1-589-701-11 o MOUNTED CIRCUIT BOARD, "SUB"

$\Delta$ 1-589-735-11 o MOUNTED CIRCUIT BOARD, "MAIN"
                                         (for DXC-601)
    △ 1-589-735-21 o MOUNTED CIRCUIT BOARD, "MAIN" (for DXC-601CE)
       2-249-361-00 o PIN, PARALLEL
 5
        2-277-466-01 s SPRING, COMPRESSION
        2-362-365-00 s FOOT, RUBBER
        3-165-904-01 s WASHER, SCREW STOPPER
 8
        3-176-022-03 o SPACER(B), MASK
 9
        3-678-684-01 o HOLDER, CABLE
10
11
        3-680-605-00 o CAP, SLIDE
        3-686-264-01 s EYECUP(3)
12
        3-686-276-01 o SCREW, M5
13
        3-710-008-02 s HOUSING, STOPPER
14
        2-113-294-01 s CUSHION, MICROPHONE
15
       7-621-770-99 s SCREW, +B 2.6X8
16
       7-621-773-86 s SCREW, +B 2.6X4
7-623-307-07 s LW 2.6, TYPE A
17
18
       7-623-912-31 s FIBER WASHER 5, MIDDLE
19
       7-624-102-04 s STOP RING 1.5, TYPE -E
20
       7-626-314-31 s SPRING PIN 2X16
       7-627-452-38 s SCREW, PRECISION +K 2X5 TYPE1
7-627-554-18 s SCREW, PRECISION +P 2X3.5 TYPE1
7-627-556-38 s SCREW, PRECISION +P 2.6X4
22
23
24
       7-682-546-09 s SCREW +B 3X5
25
26
       7-682-548-09 s SCREW +B 3X8
       7-682-560-09 s SCREW +B 4X6
27
       7-685-548-19 s SCREW +BTP 3X12 TYPE2 N-S
28
        7-688-001-12 s WASHER
29
        9-933-304-01 s ORNAMENTAL PLATE, MASK
30
       9-933-305-01 o PLATE, SPREAD
31
       9-933-306-01 o MOUNTED CIRCUIT BOARD, LED(1)
32
33
        9-933-307-01 o MOUNTED CIRCUIT BOARD, LED(2)
        9-933-325-01 o CASE, TOP
34
       9-933-326-01 o SPRING, PLATE
35
       9-933-327-01 o COVER TALLY
36
37
       9-933-328-01 s KNOB, STOPPER
       9-933-329-01 o LABEL, SWITCH
9-933-330-01 o PLATE, PARTING
39
       9-933-331-01 o STAY, BOARD
40
       9-933-332-01 s MOLT
41
        9-933-333-01 o PLATE, PARTING
42
43
       9-933-334-01 o CASE, BOTTOM
        9-933-335-01 s HOLDER T, OUTSIDE
44
        9-933-336-01 s MOLT(2)
45
        9-933-337-01 o SPRING(1), HINGE
46
47
        9-933-338-01 o SPRING(2), HINGE
        9-933-339-01 o MIRROR
48
49
        9-933-340-01 s HOLDER B, OUTSIDE
        9-933-341-01 s OUTER RING, EYEPIECE
```

```
No.
       Part No.
                    SP Description
51
       9-933-342-01 o INNER RING, EYEPIECE
       9-933-343-01 o HOLDER, LENS
9-933-344-01 s LOUPE, VF(-3D to OD)
52
53
       3-725-276-01 s LOUPE(aged eyes), VF(-2D to +1D)
       3-176-501-01 s LOUPE(aged eyes), VF(-0.5D to +3D)
       9-933-345-01 o HOLDER(2), LENS
54
       9-933-346-01 s HOLDER, EYECUP
55
       9-933-347-01 s STOPPER
56
       9-933-348-01 s SPRING, HELICAL TORSION
57
       9-933-349-01 s WASHER
58
       9-933-350-01 s HARNESS (11 CORE)
59
       9-994-797-01 o CABLE, VF
60
61
       9-994-820-01 o RING, SLIDE
62
       9-936-099-01 o SPRING, FRICTION
```

ELECTRICAL PARTS LIST

LED(1) BOARD	(MAIN BOARD)
Ref. No. or Q'ty Part No. SP Description	Ref. No. or Q'ty Part No. SP Description
1pc 9-933-306-01 s PRINTED CIRCUIT BOARD, LED(1) 1pc 9-933-312-01 s HARNESS (4 CORE) CN9 9-933-310-01 s PIN, CONNECTOR 4P	C32 9-904-851-01 s TANTALUM, CHIP 20% 10uF 16V C33 9-904-850-01 s TANTALUM, CHIP 20% 3.3uF 16V C34 1-163-125-00 s CERAMIC, CHIP 220PF 5% 50V C35 1-164-004-11 s CERAMIC, CHIP 0.1uF 10% 25V C36 1-164-004-11 s CERAMIC, CHIP 0.1uF 10% 25V
LED3 8-719-026-39 s LED CL-150UR-CD RED LED4 8-719-026-39 s LED CL-150UR-CD RED	C37 9-904-851-01 s TANTALUM, CHIP 20% 10uF 16V C38 9-904-851-01 s TANTALUM, CHIP 20% 10uF 16V C39 1-135-091-00 s TANTALUM, CHIP 1uF 20% 16V C40 1-130-481-00 s FILM 0.0068uF 5% 50V C41 1-136-287-11 s FILM 0.0047uF 5% 100V
LED(2) BOARD	C42 1-130-487-00 s FILM 0.022uF 5% 50V C43 1-135-091-00 s TANTALUM, CHIP 1uF 20% 16V
Ref. No. or Q'ty Part No. SP Description	C44 9-904-851-01 s TANTALUM, CHIP 20% 10uF 16V C45 1-135-091-00 s TANTALUM, CHIP 1uF 20% 16V C46 1-130-479-00 s FILM 0.0047uF 5% 50V
1pc 9-933-307-01 s PRINTED CIRCUIT BOARD, LED(2) 1pc 9-933-313-01 s HARNESS (3 CORE) CN10 9-933-311-01 s PIN, CONNECTOR 3P LED6 8-719-026-16 s LED CL-150D-CD ORG	C47 9-904-855-01 s ELECT 100uF 20% 16V C48 9-904-855-01 s ELECT 100uF 20% 16V C49 1-163-135-00 s CERAMIC, CHIP 560PF 5% 50V C50 9-904-850-01 s TANTALUM, CHIP 20% 3.3uF 16V C51 1-163-023-00 s CERAMIC, CHIP 0.015uF 10% 50V
LED6 8-719-026-16 s LED CL-150D-CD ORG LED7 8-719-026-39 s LED CL-150UR-CD RED	C52 1-164-004-11 s CERAMIC, CHIP 0.1uF 10% 25V C53 9-904-851-01 s TANTALUM, CHIP 20% 10uF 16V C54 1-163-018-00 s CERAMIC, CHIP 5600PF 10% 50V C55 9-904-856-01 s ELECT 220uF 20% 6.3V
MAIN BOARD Ref. No.	CN1 1-564-710-11 s PIN, CONNECTOR 8P CN2 9-933-322-01 s PIN, CONNECTOR 4P CN3 9-933-323-01 s PIN, CONNECTOR 3P CN4 9-994-792-01 s PIN, CONNECTOR 3P CN5 9-994-793-01 s PIN, CONNECTOR 2P
or Q'ty Part No. SP Description lpc	CN6 1-564-707-11 s CONNECTOR, 5P, MALE 9-933-324-01 s PIN, CONNECTOR 11P
(FOR DXF-601) 1pc	CP1
1pc 9-936-098-01 s CASE, SHIELD C1 9-933-314-01 s ELECT 100uF 20% 20V C3 9-904-851-01 s TANTALUM, CHIP 20% 10uF 16V C4 1-164-346-11 s CERAMIC, CHIP 1uF 16V	D1 8-719-989-76 s DIODE SC802-04 D2 8-719-941-09 s DIODE DAP202U D3 8-719-941-09 s DIODE DAP202U D4 8-719-941-09 s DIODE DAP202U D5 8-719-941-09 s DIODE DAP202U
C5 9-904-851-01 s TANTALUM, CHIP 20% 10uF 16V C6 1-163-131-00 s CERAMIC, CHIP 390PF 5% 50V C7 9-933-315-01 s ELECT 100uF 20% 16V C10 9-904-850-01 s TANTALUM, CHIP 20% 3.3uF 16V C11 1-164-004-11 s CERAMIC, CHIP 0.1uF 10% 25V C12 9-904-852-01 s TANTALUM, CHIP 20% 47uF 16V	D6 8-719-941-09 s DIODE DAP202U D7 8-719-820-41 s DIODE 1SS302 D8 8-719-976-56 s DIODE RLS245 D9 8-719-976-56 s DIODE RLS245 D10 8-719-919-16 s DIODE ESJA57-03
C13 1-163-125-00 s CERAMIC, CHIP 220PF 5% 50V C14 1-164-232-11 s CERAMIC, CHIP 0.01uF 10% 50V	D11 8-719-976-56 s DIODE RLS245 D12 8-719-820-41 s DIODE 1SS302
C15 1-163-243-11 s CERAMIC, CHIP 47PF 5% 50V C16 1-164-004-11 s CERAMIC, CHIP 0.1uF 10% 25V C17 1-164-004-11 s CERAMIC, CHIP 0.1uF 10% 25V	FBT
C17 C18 1-164-004-11 s CERAMIC, CHIP 0.1uF 10% 25V C19 1-164-004-11 s CERAMIC, CHIP 0.1uF 10% 25V C20 1-136-293-11 s FILM 0.0082uF 5% 100V C21 1-164-004-11 s CERAMIC, CHIP 0.1uF 10% 25V C22 9-904-854-01 s CERAMIC 470PF 10% 2KV C23 9-904-853-01 s CERAMIC, CHIP 0.1uF 20% 100V C24 9-904-858-01 s ELECT 27uF 20% 6.3V C25 1-163-135-00 s CERAMIC, CHIP 560PF 5% 50V C26 9-904-852-01 s TANTALUM, CHIP 20% 47uF 16V C31 9-904-851-01 s TANTALUM, CHIP 20% 10uF 16V	IC1

(MAIN BOARD)

Ref. No. SP Description or Q'ty Part No. 8-729-024-66 s TRANSISTOR 2SB1201-S Q2 8-729-903-46 s TRANSISTOR 2SB1132-P Q3 8-729-013-08 s TRANSISTOR 2SK1113 8-729-013-08 s TRANSISTOR 2SK1113 04 Q5 8-729-905-33 s TRANSISTOR 2SC4081 Q6 8-729-117-72 s TRANSISTOR 2SC4178 Q7 8-729-905-33 s TRANSISTOR 2SC4081 8-729-907-46 s TRANSISTOR IMZ1 Q8 R1 △ 1-216-053-00 s METAL, CHIP 1.5K 5% 1/10W △ 1-216-053-00 s METAL, CHIP 1.5K 5% 1/10W R2 1-216-049-11 s METAL, CHIP 1K 5% 1/10W 1-216-097-00 s METAL, CHIP 100K 5% 1/10W 1-216-097-00 s METAL, CHIP 100K 5% 1/10W R4 R5 R6 1-216-097-00 s METAL, CHIP 100K 5% 1/10W 1-216-073-00 s METAL, CHIP 10K 5% 1/10W 1-216-044-00 s METAL, CHIP 620 5% 1/10W **R7** 1-216-041-11 s METAL, CHIP 470 5% 1/10W 1-216-049-11 s METAL, CHIP 1K 5% 1/10W R10 Δ 1-216-076-00 s METAL, CHIP 13K 5% 1/10W Δ 1-216-053-00 s METAL, CHIP 1.5K 5% 1/10W R11 R12 1-216-061-00 s METAL, CHIP 3.3K 5% 1/10W 1-216-073-00 s METAL, CHIP 10K 5% 1/10W 1-216-073-00 s METAL, CHIP 10K 5% 1/10W R13 R14 R15 1-216-067-00 s METAL, CHIP 5.6K 5% 1/10W R16 1-216-025-00 s METAL, CHIP 100 5% 1/10W R21 R22 1-216-053-00 s METAL, CHIP 1.5K 5% 1/10W 1-216-057-00 s METAL, CHIP 2.2K 5% 1/10W R26 R27 1-216-053-00 s METAL, CHIP 1.5K 5% 1/10W 1-216-037-00 s METAL, CHIP 330 5% 1/10W \triangle 1-216-081-00 s METAL, CHIP 22K 5% 1/10W R30 R35 △ 1-216-079-00 s METAL, CHIP 18K 5% 1/10W 1-216-061-00 s METAL, CHIP 3.3K 5% 1/10W R36 R37 △ 1-216-081-00 s METAL, CHIP 22K 5% 1/10W R38 R39 △ 1-216-081-00 s METAL, CHIP 22K 5% 1/10W 1-216-073-00 s METAL, CHIP 10K 5% 1/10W 1-216-097-00 s METAL, CHIP 10OK 5% 1/10W R40 R41 1-216-049-11 s METAL, CHIP 1K 5% 1/10W R42 R43 △ 1-216-077-00 s METAL, CHIP 15K 5% 1/10W △ 1-216-077-00 s METAL, CHIP 15K 5% 1/10W 1-216-121-00 s METAL, CHIP 1M 5% 1/10W R44 R45 1-216-121-00 s METAL, CHIP 1M 5% 1/10W 1-216-056-00 s METAL, CHIP 2K 5% 1/10W R46 R47 1-216-061-00 s METAL, CHIP 3.3K 5% 1/10W 1-216-065-00 s METAL, CHIP 4.7K 5% 1/10W 1-216-059-00 s METAL, CHIP 2.7K 5% 1/10W 1-216-065-00 s METAL, CHIP 4.7K 5% 1/10W R47 R47 R48 1-216-009-00 s METAL, CHIP 22 5% 1/10W R49 R50 1-216-009-00 s METAL, CHIP 22 5% 1/10W 9-904-861-01 s CARBON, CHIP 3.3M 1% 1/8W R51 9-904-861-01 s CARBON, CHIP 3.3M 1% 1/8W 9-904-861-01 s CARBON, CHIP 3.3M 1% 1/8W 9-904-862-01 s CARBON, CHIP 91K 1% 1/8W 1-216-025-00 s METAL, CHIP 100 5% 1/10W R52 R53 R54 R55 1-216-033-00 s METAL, CHIP 220 5% 1/10W 1-216-061-00 s METAL, CHIP 3.3K 5% 1/10W 1-216-073-00 s METAL, CHIP 10K 5% 1/10W R56 R57 R65 1-216-025-00 s METAL, CHIP 100 5% 1/10W 1-216-089-00 s METAL, CHIP 47K 5% 1/10W R66

(MAIN BOARD)

R68 1-216-089-00 s METAL, CHIP 47K 5% 1/10W R69 1-216-067-00 s METAL, CHIP 5.6K 5% 1/10W 1-216-025-00 s METAL, CHIP 100 5% 1/10W 1-216-027-00 s METAL, CHIP 100 5% 1/10W 1-216-027-00 s METAL, CHIP 120 5% 1/10W 1-216-075-00 s METAL, CHIP 12K 5% 1/10W 1-216-093-00 s METAL, CHIP 12K 5% 1/10W 1-216-075-00 s METAL, CHIP 12K 5% 1/10W 1-216-075-00 s METAL, CHIP 12K 5% 1/10W 1-216-089-00 s METAL, CHIP 12K 5% 1/10W 1-216-089-00 s METAL, CHIP 47K 5% 1/10W 1-216-089-00 s METAL, CHIP 2.2K 5% 1/10W 1-216-089-00 s METAL, CHIP 2.2K 5% 1/10W 1-216-089-00 s METAL, CHIP 2.2K 5% 1/10W 1-216-069-11 s METAL, CHIP 12 5% 1/10W 1-216-069-11 s METAL, CHIP 10K 5% 1/10W 1-216-308-00 s METAL, CHIP 10K 5% 1/10W 1-216-308-00 s METAL, CHIP 1 S.6K 5% 1/10W 1-216-065-00 s METAL, CHIP 1 S.6K 5% 1/10W 1-216-085-00 s METAL, CHIP 10K 5% 1/10W 1-216-097-00 s METAL, CHIP 10K 5% 1/10	Ref. No. or Q'ty	Part No. SP	Description
R74 R75 1-216-027-00 s METAL, CHIP 120 5% 1/10W R76 1-216-093-00 s METAL, CHIP 12K 5% 1/10W R77 1-216-075-00 s METAL, CHIP 68K 5% 1/10W R78 1-216-075-00 s METAL, CHIP 12K 5% 1/10W R79	R69 R70 R71	1-216-067-00 s 1-216-025-00 s 1-216-071-00 s	METAL, CHIP 5.6K 5% 1/10W METAL, CHIP 100 5% 1/10W METAL, CHIP 8.2K 5% 1/10W
R79	R74 R75 R76	1-216-027-00 s 1-216-075-00 s 1-216-093-00 s	METAL, CHIP 120 5% 1/10W METAL, CHIP 12K 5% 1/10W METAL, CHIP 68K 5% 1/10W
R84	R79	1-216-089-00 s 1-216-057-00 s 1-216-105-00 s	METAL, CHIP 47K 5% 1/10W METAL, CHIP 2.2K 5% 1/10W METAL, CHIP 22OK 5% 1/10W
R89	R84 R85 R86	1-216-067-00 s 1-216-073-00 s 1-216-069-11 s	METAL, CHIP 5.6K 5% 1/10W METAL, CHIP 10K 5% 1/10W METAL, CHIP 6.8K 5% 1/10W
R94	R89 R90 R91	1-216-061-00 s 1-216-065-00 s 1-216-308-00 s	METAL, CHIP 3.3K 5% 1/10W METAL, CHIP 4.7K 5% 1/10W METAL, CHIP 4.7 5% 1/10W
RV2	R94 R95 R96	1-216-097-00 s 1-216-043-00 s 1-216-033-00 s	METAL, CHIP 100K 5% 1/10W METAL, CHIP 560 5% 1/10W METAL, CHIP 220 5% 1/10W
RV7 9-933-319-01 s RES, VAR METAL 200	RV2 △ RV3 △ RV4	9-933-317-01 s 9-933-318-01 s 9-933-319-01 s	RES, VAR METAL 5K RES, VAR METAL 10K RES, VAR METAL 200
The second of th	RV6 RV7 RV8	9-933-319-01 s	RES, VAR METAL 200

R67

SUB BOARD		(SUB BOA	ARD)
Ref. No. or Q'ty Part No	o. SP Description	Ref. No. or Q'ty	Part No. SP Description
1pc 1-589-7	701-11 s MOUNTED CIRCUIT BOARD, SUB	R121 R122	1-216-038-11 s METAL, CHIP 360 5% 1/10W 1-216-042-00 s METAL, CHIP 510 5% 1/10W
C62 9-904-8 C63 9-904-8 C64 1-163-2	844-01 s TANTALUM, CHIP 20% 10uF 16V 844-01 s TANTALUM, CHIP 20% 10uF 16V 845-01 s TANTALUM, CHIP 20% 22uF 10V 239-11 s CERAMIC, CHIP 33PF 5% 50V	R124	1-216-053-00 s METAL, CHIP 1.5K 5% 1/10W 1-216-065-00 s METAL, CHIP 4.7K 5% 1/10W 1-216-043-00 s METAL, CHIP 560 5% 1/10W
C66 1-163-2 C67 1-163-2 C68 1-163-1	344-01 s TANTALUM, CHIP 20% 10uF 16V 239-11 s CERAMIC, CHIP 33PF 5% 50V 243-11 s CERAMIC, CHIP 47PF 5% 50V 125-00 s CERAMIC, CHIP 220PF 5% 50V	R126 R127 R128 R129 R130	1-216-033-00 s METAL, CHIP 220 5% 1/10W 1-216-065-00 s METAL, CHIP 4.7K 5% 1/10W 1-216-025-00 s METAL, CHIP 100 5% 1/10W 1-216-071-00 s METAL, CHIP 8.2K 5% 1/10W 1-216-047-00 s METAL, CHIP 820 5% 1/10W
C70 1-164-2	846-01 s TANTALUM, CHIP 20% 4.7uF 10V 232-11 s CERAMIC, CHIP 0.01uF 10% 50V	R131 R132	1-216-054-00 s METAL, CHIP 1.6K 5% 1/10W 1-216-073-00 s METAL, CHIP 10K 5% 1/10W
	346-11 s CERAMIC, CHIP 1uF 16V 303-01 s PIN, CONNECTOR 11P	R133 R134 R135	1-216-073-00 s METAL, CHIP 10K 5% 1/10W 1-216-057-00 s METAL, CHIP 2.2K 5% 1/10W 1-216-091-00 s METAL, CHIP 56K 5% 1/10W
D16 9-904-8 D17 8-719-8	320-41 s DIODE 1SS302 342-01 s DIODE HZK4ALLTR 320-41 s DIODE 1SS302 843-01 s DIODE HZK9CLTR	R136 R137 R138 R139	1-216-085-00 s METAL, CHIP 33K 5% 1/10W 1-216-087-11 s METAL, CHIP 39K 5% 1/10W 1-216-133-00 s METAL, CHIP 3.3M 5% 1/10W 1-216-087-11 s METAL, CHIP 39K 5% 1/10W
DL1 1-406-7	729-21 s DELAY LINE 120ns	RV9 RV10	9-933-301-01 s RES, VAR CARBON 2K 1-241-828-21 s RES, ADJ METAL 500
	242-66 s IC TC4W66F	RV11 RV12	9-933-301-01 s RES, VAR CARBON 2K 1-216-741-11 s RES, ADJ METAL 50K
	392-11 s INDUCTOR, CHIP 82uH	RV13	9-933-302-01 s RES, VAR CARBON 10K
	950-44 s DIODE GL-5LR40, RED 950-44 s DIODE GL-5LR40, RED	S1	1-570-845-11 s SWITCH, SLIDE
Q16 8-729-9 Q17 8-729-1 Q18 8-729-1	927-87 s TRANSISTOR 2SA1579RR 927-87 s TRANSISTOR 2SA1579RR 117-72 s TRANSISTOR 2SC4178 117-72 s TRANSISTOR 2SC4178 117-72 s TRANSISTOR 2SC4178	PACKING	MATERIALS
Q21 8-729-1 Q22 9-904-8 Q23 9-904-8	117-72 s TRANSISTOR 2SC4178 117-72 s TRANSISTOR 2SC4178 841-01 s TRANSISTOR 2SC4102 841-01 s TRANSISTOR 2SC4102 841-01 s TRANSISTOR 2SC4102	Ref. No. or Q'ty	Part No. SP Description 3-686-330-01 o CUSHION, BOTTOM 3-686-331-01 o CUSHION, TOP
	927-87 s TRANSISTOR 2SA1579RR	lpc lpc	3-686-332-01 o INDIVIDUAL CARTON (FOR DXF-601) 3-686-333-01 o INDIVIDUAL CARTON (FOR DXF-601CE)
R102 1-216-0 R103 1-216-0 R104 1-216-0	073-00 s METAL, CHIP 10K 5% 1/10W 043-00 s METAL, CHIP 560 5% 1/10W 080-00 s METAL, CHIP 20K 5% 1/10W 073-00 s METAL, CHIP 10K 5% 1/10W 049-11 s METAL, CHIP 1K 5% 1/10W		
R107 1-216-0 R108 1-216-0 R109 1-216-0	083-00 s METAL, CHIP 27K 5% 1/10W 081-00 s METAL, CHIP 22K 5% 1/10W 025-00 s METAL, CHIP 100 5% 1/10W 061-00 s METAL, CHIP 3.3K 5% 1/10W 042-00 s METAL, CHIP 510 5% 1/10W		
R112 1-216-0 R113 1-216-0 R114 1-216-0	042-00 s METAL, CHIP 510 5% 1/10W 042-00 s METAL, CHIP 510 5% 1/10W 055-11 s METAL, CHIP 1.8K 5% 1/10W 055-11 s METAL, CHIP 1.8K 5% 1/10W 063-00 s METAL, CHIP 3.9K 5% 1/10W		
R117 1-216-4 R118 1-216-4 R119 1-216-4	057-00 s METAL, CHIP 2.2K 5% 1/10W 042-00 s METAL, CHIP 510 5% 1/10W 025-00 s METAL, CHIP 100 5% 1/10W 025-00 s METAL, CHIP 100 5% 1/10W 057-00 s METAL, CHIP 100 5% 1/10W		